



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/836,514	04/17/2001	Karl K. Rink	AAI-14052	6593

7590 11/17/2003  
Mr. James D. Erickson, Manager  
ASP Patent Department  
Autoliv ASP, Inc.  
3350 Airport Road  
Ogden, UT 84405

EXAMINER

HARDEE, JOHN R

ART UNIT PAPER NUMBER

1751

DATE MAILED: 11/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/836,514

Applicant(s)

RINK ET AL.

Examiner

John R Hardee

Art Unit

1751

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 25-28, 30, 31, 36-42, 44-51 and 53-66 is/are pending in the application.
- 4a) Of the above claim(s) 27, 28, 44-46, 48-51, 55, 56, 58-60 and 63-66 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 30 and 53 is/are allowed.
- 6) ☒ Claim(s) 25, 26, 31, 36-42, 47, 54, 57 and 62 is/are rejected.
- 7) ☒ Claim(s) 61 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet, 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet, 37 CFR 1.78.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 4, 2003 has been entered.
2. Claims 27, 28, 44-46, 48-51, 55, 56, 58-60 and 63-66 are withdrawn from consideration by the examiner as being drawn to embodiments non-elected with traverse. The restriction was made final in a previous office action.
3. The remaining claims have been searched and examined only to the extent that they read on potassium t-butyl carbonate, found allowable by the examiner, and ammonium nitrate as the water-supplying species, found obvious by the examiner.

### ***Claim Rejections - 35 USC § 103***

4. Claims 25, 26, 31, 36-39, 42, 47 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/29261. The reference discloses carborane containing airbag inflators and methods for their inflation. According to one inflation method, combustion of a carborane fuel and a primary oxidant form combustion products including heat and a quantity of a first product fuel species (p. 6, lines 26+). A portion of the first combustion products inflate the device. Water is a preferred primary oxidant (p. 12, lines 20+), but the oxidant need not be water. Note p. 24, lines 3+, in which

ammonium nitrate is disclosed as a particularly preferred oxidant source material. Note also the inflators in Tables 1 and 2, in which ammonium nitrate is used as an oxidant in addition to water. The combustion products react with pressurized nitrous oxide in the presence of pressurized inert gas in a combustion chamber to form product gases which inflate the airbag. The fuel and oxidant may be stored as a mixture (p. 13, lines 6+) or segregated (p. 12, lines 30+). Chamber 16 has a rupture disc 32 covering perforation 30 (see drawing on front). Liner 36 maintains the charge in discharge proximity with initiator device 42. The reference does not disclose a water-free device with sufficient specificity to constitute anticipation.

It would have been obvious at the time the invention was made to construct an airbag inflator which does not utilize water, as the reference teaches that water is a preferred, but not a necessary oxidant, as noted above.

5. Claims 25, 26, 31, 36-39, 41, 42, 57 and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nielson et al., US 6,224,099 B1. The reference discloses hybrid airbag inflator systems and igniter compositions for same. The burning of a small amount of propellant propels a piston into a container of *inert* gas which ruptures. The enclosed gas mixes with and is heated by gases generated by the burning of the propellant (col. 5, lines 15-35). Suitable gas generants comprise an oxidizer, such as ammonium nitrate (col. 6, lines 39+). Gas generant compositions may further comprise a binder, such as polypropylene carbonate (col. 7, lines 24+). The chamber must be perforated in order to allow travel of the piston and to allow gas to escape (col. 8, lines 11-13). End piece 4 holds squib 5, and may be considered a liner for the housing (col.

8, lines 15-16). This reference differs from the claimed subject matter in that it does not disclose a method which reads on applicant's claims with sufficient specificity to constitute anticipation.

It would have been obvious at the time the invention was made to use an airbag in the claimed method, because this reference teaches that all of the components recited by applicants are suitable for inclusion in a hybrid airbag. The person of ordinary skill in the surfactant art would expect the recited compositions to have properties similar to those compositions which are exemplified, absent a showing to the contrary. Regarding the chemistry recited in the method steps, the examiner takes the position that the same materials will react to give the same products, whether in applicant's airbag or the prior art airbag.

6. Claims 25, 26, 31 and 36-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor et al., US 5,486,248. The reference discloses extrudable gas generants for hybrid airbag inflators. The generant comprises about 70-90% of an oxidizer. Ammonium nitrate is disclosed as being a useful oxidizer (col. 5, lines 40+). Coolants may be added at up to 30% of the composition. Suitable coolants include magnesium, lithium, calcium and strontium carbonate salts (col. 5, bottom). This reference differs from the claimed subject matter in that it does not disclose a method which reads on applicant's claims with sufficient specificity to constitute anticipation.

It would have been obvious at the time the invention was made to use an airbag in the claimed method, because this reference teaches that all of the components recited by applicants are suitable for inclusion in a hybrid airbag. The person of ordinary

skill in the surfactant art would expect the recited compositions to have properties similar to those compositions which are exemplified, absent a showing to the contrary. Regarding the chemistry recited in the method steps, the examiner takes the position that the same materials will react to give the same products, whether in applicant's airbag or the prior art airbag.

***Allowable Subject Matter***

7. Claims 30 and 53 are allowed.
8. Claim 61 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
9. The following is a statement of reasons for the indication of allowable subject matter: The closest prior art of record is the references relied upon above. Neither reference anticipates or motivates the use of potassium t-butyl carbonate as a fuel.

***Response to Arguments***

10. Applicant's arguments filed November 4, 2003 have been fully considered but they are not persuasive. Applicant's amendment excluding free water does overcome the 102 rejection, however. The WO clearly prefers that water be used as the primary oxidant, but a fair reading of the reference provides motivation not to use water, and to use ammonium nitrate as the primary oxidant instead. The teachings of a reference are not confined to what is disclosed as preferred or to what is exemplified.

Claim 57 should have been rejected over the prior art, as the recited method is not generically allowable. It would only be allowable if inclusion of potassium t-butyl carbonate were recited. This action corrects that oversight, and is therefore NOT FINAL.

The 103 rejection over the WO is expanded to clarify the examiner's position that use of a water-free water-providing material is motivated by the reference.

The examiner has not equated a propylene carbonate binder with a carbonate salt or an alkyl carbonate. Propylene carbonate is a "carbonate containing material" as recited by applicant, regardless of what applicant disclosed in the specification or might have meant to recite in the claims. Claims receive their broadest reasonable interpretation during prosecution.

Applicant argues that the end piece disclosed in the WO is not a liner which maintains the contents in discharge proximity with the igniter. This is not persuasive because any structure which comprises a portion of the chamber can be broadly construed as lining the chamber. The functional language regarding discharge proximity amounts to a recitation of intended use, which does not further define the feature. End piece 4 is clearly contained within perforated side piece 2, and meets the limitation of the claim. Furthermore, it acts as a liner wherever it is inside piece 2.

Newly added claims 64-67 have not been searched and examined because the search has not been broadened beyond use of ammonium nitrate as a water supplying compound.

11. Any inquiry concerning this communication or earlier communications from the

Application/Control Number: 09/836,514

Page 7

Art Unit: 1751

examiner should be directed to the examiner, Dr. John R. Hardee, whose telephone number is (703) 305-5599. The examiner can normally be reached on Monday through Friday from 8:00 until 4:30. In the event that the examiner is not available, his supervisor, Dr. Yogendra Gupta, may be reached at (703) 308-4708.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to read 'J. Hardee', with a stylized, cursive script.

John R. Hardee  
Primary Examiner  
November 10, 2003